Mr. Allan W. Baker
Chesterfield Animal Hospital
440 E. Main
Chesterfield, IN 46017

Dear Mr. Baker:

Re: Exempt Construction and Operation Status,
095-16023-00117

The application from Chesterfield Animal Hospital, received on March 21, 2002, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission unit, to be located at 440 E. Main, Chesterfield, Indiana, is classified as exempt from air pollution permit requirements:

(a) One (1) Power-Pak Jr. incinerator for the cremation of animals, with a maximum capacity of 225 pounds per hour, using natural gas as supplemental fuel, at the rate of 1.2 million BTU per hour.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

(2) Pursuant to 326 IAC 4-2-2, the crematory incinerator shall:

(1) consist of primary and secondary chambers or the equivalent;

(2) be equipped with a primary burner unless burning wood products;

(3) comply with 326 IAC 5-1 and 326 IAC 2;

(4) be maintained properly as specified by the manufacturer and approved by the commissioner;

(5) be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner.

(6) comply with other state and/or local rules or ordinances regarding installation and operation

of incinerators.

(7) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(8) not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1000) pound of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air;

(9) not create a nuisance or a fire hazard.

The operation of this incinerator shall be terminated immediately upon noncompliance with any of the above mentioned requirements.

(3) Any change or modification which may increase the potential to emit of a combination of HAPs to twenty-five (25) tons per year or a single HAP to ten (10) tons per year from this source shall require approval from IDEM, OAQ, prior to making the change.

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

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cc: File - Madison County
Madison County Health Department
Air Compliance - Warren Greiling
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	Chesterfield Animal Hospital
Source Location:	440 E. Main, Chesterfield, IN 46017
County:	Madison
SIC Code:	0742
Operation Permit No.:	095-16023-00117
Permit Reviewer:	Madhurima D. Moulik

The Office of Air Quality (OAQ) has reviewed an application from Chesterfield Animal Hospital relating to the construction and operation of an incinerator for an animal crematorium.

New Emission Units and Pollution Control Equipment

The source plans to construct the following emission unit:

(a) One (1) Power-Pak Jr. incinerator for the cremation of animals, with a maximum capacity of 225 pounds per hour, using natural gas as supplemental fuel, at the rate of 1.2 million BTU per hour.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on May 21, 2002. Additional information was received on May 28, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational

design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	3.4
PM-10	3.4
SO_2	1.2
VOC	1.5
CO	5.3
NO_x	2.0

HAP's	Potential To Emit (tons/year)
Single HAP	Negligible
Combination of HAPs	Negligible

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC, NO_x, and SO_2 are less than 25 tons per year each, as well as less than 5 tons per year of PM and PM-10, and less than 25 tons per year of CO. Therefore, pursuant to 326 IAC 2-1.1-3(d)(1), the source will be granted an exemption.

County Attainment Status

The source is located in Madison County.

Pollutant	Status
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Madison County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Madison County has been classified as attainment or unclassifiable for PM-10, SO_2, CO, and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Federal Rule Applicability

(a) The incinerator has a charge rate of less than fifty (50) tons per day. Therefore, it is not subject to the requirements of the New Source Performance Standard, (326 IAC 12, 40 CFR 60.50, Subpart E).

(b) The crematory incinerator does not combust any hazardous waste as defined in 40 CFR 261. Therefore, the incinerator is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs)(40 CFR 63, Subpart EEE).

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit less than one hundred (100) tons per year of any pollutant.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 4-2-2 (Incinerators: requirements)

Pursuant to 326 IAC 4-2, the incinerators shall:

(a) Consist of primary and secondary chambers or the equivalent;

(b) Be equipped with a primary burner unless burning wood products;

(c) Comply with 326 IAC 5-1 and 326 IAC 2;

(d) Be maintained properly as specified by the manufacturer and approved by the commissioner;

(e) Be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner;

(f) Comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;

(g) Be operated so that emissions of hazardous material including but not limited to viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(h) Not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas at standard condition corrected to fifty percent (50%) excess air; and

(i) Not create a nuisance or fire hazard.

If any of the above result, the burning shall be terminated immediately.

The manufacturer's guaranteed particulate emission rate for the incinerator is 0.15 pounds of particulate per 1,000 pounds of dry exhaust gas, corrected to 50% excess air; therefore, the new incinerators will be in compliance with 326 IAC 4-2-2.

326 IAC 6-3-2 (Process Operations)

Incinerators are exempt from 326 IAC 6-3-2. Therefore, this rule does not apply.

326 IAC 8-1-6 (General provisions relating to VOC rules: general reduction requirements for new facilities)

The crematory incinerator has potential VOC emissions of less than 25 tons per year. Therefore, 326 IAC 8-1-6 does not apply.

Conclusion

The construction and operation of this animal cremation incinerator shall be subject to the conditions of the attached proposed Exemption No. 095-16023-00117.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Furnace
Company Name: Chesterfield Animal Hospital
Address City IN Zip: 440 E. Main, Chesterfield, IN 46017
CP: 095-16023
Plt ID: 095-00117
Reviewer: Madhurima D. Moulik
Date: May 24, 2002

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
1.2	10.5

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.5	0.0	0.4

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Furnace
Company Name: Chesterfield Animal Hospital
Address City IN Zip: 440 E. Main, Chesterfield, IN 46017
CP: 095-16023
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Reviewer: Madhurima D. Moulik
Date: May 24, 2002

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	1.104E-05	6.307E-06	3.942E-04	9.461E-03	1.787E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	2.628E-06	5.782E-06	7.358E-06	1.997E-06	1.104E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emission Calculations
Incinerator

Company Name: Chesterfield Animal Hospital
Address City IN Zip: 440 E. Main, Chesterfield, IN 46017
CP: 095-16023
Plt ID: 095-00117
Reviewer: Madhurima D. Moulik
Date: May 24, 2002

THROUGHPUT lbs/hr	THROUGHPUT ton/yr
225	985.5

	POLLUTANT				
	PM	SO2	CO	VOC	NOX
Emission Factor in lb/ton	7.0	2.5	10.0	3.0	3.0
Potential Emissions in ton/yr	3.4	1.2	4.9	1.5	1.5

Methodology

Emission factors are from AP 42 (5th Edition 1/95) Table 2.1-12, Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chambers
Throughput (lb/hr) * 8760 hr/yr * ton/2000 lb = throughput (ton/yr)

Total Emissions

Company Name: Chesterfield Animal Hospital
Address City IN Zip: 440 E. Main, Chesterfield, IN 46017
CP: 095-16023
Plt ID: 095-00117
Reviewer: Madhurima D. Moulik
Date: May 24, 2002

Emissions in Tons Per Year

Emission Unit	PM	PM-10	SO2	NOx	VOC	CO
Incinerator	3.4	3.4	1.2	1.5	1.5	4.9
Furnace (supplemental fuel)	0	0	0	0.5	0	0.4
Total Emissions (tons/yr)	**3.4**	**3.4**	**1.2**	**2**	**1.5**	**5.3**